

Process of producing polytrimethylene terephthalate (PTT) by esterification of terephthalic acid (TPA) with trimethylene glycol (TMG) in the presence of a catalytic titanium compound, precondensation and polycondensation. The esterification is effected in at least two stages, where in the first stage a molar ratio of TMG to TPA of 1.15 to 2.5, a content of titanium of 0 to 40 ppm, a temperature of 240 to 275 °C, and a pressure of 1 to 5.0 bar, preferably 3.5 bar are used. In the at least one subsequent stage a content of titanium is adjusted which is higher than in the initial stage by 35 to 110 ppm.

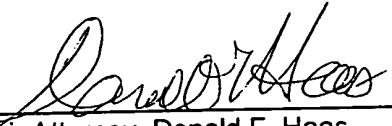
In the Claims:

1. (Amended) A process of producing polytrimethylene terephthalate (PTT) with an intrinsic viscosity of 0.75 up to at least 1.15 dl/g by esterification of terephthalic acid (TPA) with trimethylene glycol (TMG) in the presence of a catalytic titanium compound to obtain an esterification product, precondensation of the esterification product to obtain a precondensation product and polycondensation of the precondensation product to obtain PTT, characterized in that
 - a) the esterification is performed in at least two stages, a first, initial stage and at least one second subsequent esterification step,
 - b) a catalyst feed is provided wherein the catalyst is a compound of a metal which may be titanium or zirconium,
 - c) a major quantity between 65 and 100 wt% of said catalyst feed containing 35 to 110 ppm metal is introduced into the at least one subsequent esterification stage, which is operated at a temperature of 240 to 275°C and a pressure of 0.7 to 1.5 bar,
 - d) a minor quantity of said catalyst feed containing 0 to 40 ppm metal and up to 35 wt% of the total catalyst is directly fed to the initial esterification stage which is operated at a temperature of 240 to 275°C, a total molar TMG to TPA feed ratio of 1.15 to 2.5, and a pressure of 1 to 5.0 bar,
 - e) the precondensation is performed at a temperature of 250 to 270°C under a reduced pressure between 2 and 200 mbar, and
 - f) the polycondensation is carried out in the melt phase at a pressure of 0.2 to 2.5 mbar and a temperature of 250 to 270°C.

19. (Amended) A process as claimed in claim 1, characterized in that the temperatures of the walls of the reaction vessels are controlled by using a heat transfer medium (HMT) be used and that the HMT temperature be not more than 300°C.

Respectfully submitted,

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